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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,455	02/02/2001	Yasuo Ishihara	54399039	1570

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EXAMINER

NGUYEN, PHUNG

ART UNIT	PAPER NUMBER
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2632

DATE MAILED: 12/30/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/775,455

Applicant(s)

ISHIHARA ET AL.

Examiner

Phung T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,9,11-14,17-28,32,34,37-39,42-45,48,49,53-55 and 57 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,9,11-14,17-28,32,34,37-39,42-45,48,49,53-55 and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 and 5. 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims withdrawn from consideration are 2,3,6-8,10,15,16,29-31,33,35,36,40,41,46,47,50-52,56,58 and 59.

DETAILED ACTION

Supplemental Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

1. Claims 6 and 29 drawn to the speed of the aircraft.
2. Claims 7 and 30 drawn to the wind condition.
3. Claims 8 and 31 drawn to the flight path angle of the aircraft.
4. Claims 10 and 33 drawn to the track of the aircraft.
5. Claims 35, 36, 46, 47, 52, 56, 58, and 59 drawn to the runway data.
6. Claims 2, 15, 40 and 50 drawn to the surface condition.
7. Claims 3, 16, 41, and 51 drawn to the atmospheric condition.
8. Claims 9, 26, 32, 37, 42, 48, and 57 drawn to the ground proximity warning/terrain data.

Currently, claims 1, 4, 5, 11-14, 17-25, 27, 28, 34, 38, 39, 43-45, 49, and 53-55 are generic.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to

be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with Mr. Michael Smith on 12/17/03 a provisional election was made **without** traverse to prosecute the invention of Group 8, claims 9, 26, 32, 37, 42, 48, and 57. Affirmation of this election must be made by applicant in replying to this Office action. Claims 2, 3, 6-8, 10, 15, 16, 29-31, 33, 35, 36, 40, 41, 46, 47, 50-52, 56, 58, and 59 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. **It is noted that a Restriction had been made in the previous Office action of Paper No. 7, but that a minor mistake had been made to the groupings. The current Restriction and Election over the phone by Applicant corrects such minor mistake.**

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 19, 49, 54, 55, and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Bateman et al. (U.S. Pat. 5,220,322).

Regarding claim 1: Bateman et al. disclose a ground proximity warning system for use with aircraft having egraded performance comprising the steps of estimating a deceleration required to stop the aircraft on a runway; comparing the deceleration to the a maximum

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deceleration of the aircraft; and asserting an alert signal when the deceleration is greater than the maximum deceleration (col. 9, lines 1-41).

Regarding claim 19: All the claimed subject matter is already discussed in respect to claim 1 above.

Regarding claim 49: All the claimed subject matter is already discussed in respect to claim 1 above. Bateman et al. inherently teach a signal processing device coupled to the input and to the output (col. 3, lines 21-32).

Regarding claim 54: Bateman et al. disclose the alert signal includes signal useful for driving a display (col. 9, lines 55-58).

Regarding claim 55: Bateman et al. disclose the alert signal includes an aural alert signal (col. 4, lines 11-13).

Regarding claim 57: Bateman et al. disclose an Enhanced Ground Proximity Warning computer (col. 2, lines 20-24).

4. Claims 13, 14, 18, 23, 24, 38, 39, 42, 43, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Crook (U.S. Pat. 5,142,478).

Regarding claim 13: Crook teaches monitoring a plurality of parameters indicative of a runway landing length; assigning a risk of runway overrun value based on the plurality of parameters; and asserting an alert signal when the risk value exceeds a predetermined threshold value (col. 2, lines 4-14, and col. 3, lines 16-32).

Regarding claim 14: Crook teaches monitoring a deceleration required to stop the aircraft (col. 3, lines 3-22).

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Regarding claim 18: Crook discloses commanding an autopilot go-around maneuver (col. 2, lines 61-68).

Regarding claim 23: Crook teaches a computer 14 having computer readable program code (col. 2, lines 61-64); monitoring a plurality of parameters indicative of a runway landing length; assigning a risk of runway overrun value based on the plurality of parameters; and asserting an alert signal when the risk value exceeds a predetermined threshold value (col. 2, lines 4-14, and col. 3, lines 16-32).

Regarding claim 24: Crook discloses an autopilot go-around command when the alert signal is asserted (col. 2, lines 61-68).

Regarding claim 38: Crook teaches a signal processing device 14 coupled to the input and to the output (col. 2, lines 61-68, and col. 3, lines 1-5) for assigning a risk of runway overrun value based on the plurality of parameters; and asserting an alert signal when the risk value exceeds a predetermined threshold value (col. 2, lines 4-14, and col. 3, lines 16-32).

Regarding claim 39: Crook teaches a deceleration required to stop the aircraft (col. 2, line 68, and col. 3, lines 1-5).

Regarding claim 42: Crook teaches an Enhanced Ground proximity Warning computer (col. 2, lines 61-64).

Regarding claim 43: Crook teaches the alert signal includes signals useful for driving a display (col. 3, lines 31-40).

Regarding claim 45: Crook discloses an autopilot go-around maneuver command (col. 2, lines 64-68).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4, 5, 11, 20, 21, 22, 25-28, 34, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bateman et al. in view of Crook (U.S. Pat. 5,142,478).

Regarding claim 4: Bateman et al. disclose generating an alert signal in the event that the deceleration deviates from the normal deceleration profile (col. 9, lines 43-48) but do not teach the step of commanding an autopilot go-around maneuver as claimed. However, Crook teaches a computerized aircraft landing and takeoff system comprising the step of commanding an autopilot go-around when the computer 14 determines that the landing is unsafe (col. 2, lines 61-62, and col. 3, lines 23-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Crook in the system of Bateman et al. because they both teach a device relates to the field of aircraft ground proximity warning system. Crook's teaching of initiating a go-around maneuver if the approach is unstabilized would enhance the system of Bateman et al. by insuring a safe landing.

Regarding claim 5: Bateman et al. disclose monitoring a plurality of parameters indicative of an unstabilized approach and asserting an alert signal when the value exceeds a predetermined threshold amount (col. 9, lines 1-41) but do not teach assigning a risk of go-around value according to each of the parameters. However, Crook teaches a computerized aircraft landing and takeoff system comprising the step of commanding an autopilot go-around

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when the computer 14 determines that the landing is unsafe (col. 2, lines 61-62, and col. 3, lines 23-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Crook in the system of Bateman et al. because they both teach a device relates to the field of aircraft ground proximity warning system. Crook's teaching of initiating a go-around maneuver if the approach is unstabilized would enhance the system of Bateman et al. by insuring a safe landing.

Regarding claim 11: Refer to claim 4 above.

Regarding claim 20: Refer to claim 4 above.

Regarding claim 21: All the claimed subject matter is already discussed in respect to claim 5 above.

Regarding claim 22: Crook discloses an autopilot go-around command when the alert signal is asserted (col. 2, lines 61-68).

Regarding claim 25: Bateman et al. disclose a signal processing device coupled to the input and to the output for asserting an alert signal when the value exceeds a predetermined threshold amount (col. 9, lines 1-41) but do not teach assigning a risk of go-around value according to the parameters. However, Crook teaches a computerized aircraft landing and takeoff system comprising the step of commanding an autopilot go-around when the computer 14 determines that the landing is unsafe (col. 2, lines 61-62, and col. 3, lines 23-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teaching of Crook in the system of Bateman et al. because they both teach a device relates to the field of aircraft ground proximity warning system. Crook's teaching of initiating a

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go-around maneuver if the approach is unstabilized would enhance the system of Bateman et al. by insuring a safe landing.

Regarding claim 26: Bateman et al. disclose an Enhanced Ground Proximity Warning computer (col. 2, lines 20-24).

Regarding claim 27: Bateman et al. disclose the alert signal includes signal useful for driving a display (col. 9, lines 55-58).

Regarding claim 28: Bateman et al. disclose the alert signal includes an aural alert signal (col. 4, lines 11-13).

Regarding claim 34: Refer to claim 4 above.

Regarding claim 53: Refer to claim 4 above.

7. Claims 9, 12, 32, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bateman et al. in view of Crook and further in view of Muller et al. (U.S. Pat. 5,839,080).

Regarding claim 9: Bateman et al. and Crook do not directly teach the step of monitoring a plurality of parameters includes the step of monitoring a position of the aircraft. However, the use of Global positioning system (GPS) to indicate the current position and projected flight path of the aircraft is old and well known in the art as taught by Muller et al. (col. 5, lines 26-39). Therefore, it would have been obvious to the skilled artisan to use the GPS of Muller et al. in the system of the combination so that the position of the aircraft is accurately monitored.

Regarding claim 12: Bateman et al. and Crook teach asserting a go-around warning signal when the value exceeds the predetermined threshold amount but do not teach a caution

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alert signal when the value exceeds a first threshold amount and a warning signal when the value exceeds the second threshold amount. However, Muller et al. teach a pair of alert envelopes, a caution envelope (yellow alert) and a warning envelope (red alert) as seen in figure 17, col. 9, lines 6-10. Therefore, it would have been obvious to the skilled artisan to combine the teachings of Bateman et al., Crook, and Muller et al. in order to provide an alert signal based upon the type of alert that is provided, i.e., a less severe cautionary alert or a more severe warning alert.

Regarding claim 32: Refer to claim 9 above.

Regarding claim 37: Bateman et al. and Crook do not show the parameters include terrain data. However, Muller et al. disclose the terrain database 24 to provide varying resolutions of terrain data as a function of the topography of the terrain (col. 6, lines 7-48). Therefore, it would have been obvious to one of ordinary skill in the art to employ the teaching of Muller et al. in the system of the combination in order to provide information relating to geographical areas such as mountainous areas and areas in the vicinity of an airport.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crook in view of Muller et al. (U.S. Pat. 5,839,080).

Regarding claim 17: Crook discloses the computer 14 to make the safeness decision for the landing (col. 2, lines 61-68) but does not teach a caution alert signal when the value exceeds a first threshold amount and a warning signal when the value exceeds the second threshold amount. However, Muller et al. teach a pair of alert envelopes, a caution envelope (yellow alert) and a warning envelope (red alert) as seen in figure 17, col. 9, lines 6-10. Therefore, it would have been obvious to the skilled artisan to combine the teachings of Crook and Muller et al. in

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order to provide an alert signal based upon the type of alert that is provided, i.e., a less severe cautionary alert or a more severe warning alert.

9. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crook in view of Bateman et al. (U.S. Pat. 5,220,322).

Regarding claim 44: Crook teaches the alert signal includes signals useful for driving a display (col. 3, lines 31-40) but does not show the alert signal including an aural alert signal. However, using an aural alert signal as an alternative way to generate the alarm is old and known in the art as taught by Bateman et al. (col. 4 lines 11-13). Therefore, it would have been obvious to the skilled artisan to employ the teaching of Bateman et al. in the system of Crook in order to provide an audible warning if desired.

10. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crook in view of Muller et al. (U.S. Pat. 5,839,080).

Regarding claim 48: Crook does not show the parameters include terrain data. However, Muller et al. disclose the terrain database 24 to provide varying resolutions of terrain data as a function of the topography of the terrain (col. 6, lines 7-48). Therefore, it would have been obvious to one of ordinary skill in the art to employ the teaching of Muller et al. in the system of Crook in order to provide information relating to geographical areas such as mountainous areas and areas in the vicinity of an airport.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Muller [U.S. Pat. 5,153,588] discloses a warning system having low intensity wind shear enhancements.

b. Smith [U.S. Pat. 4,122,522] discloses an aircraft ground monitoring system.

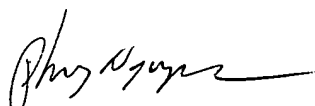
c. Schroeder [U.S. Pat. 6,107,943] discloses a display symbology indicating aircraft ground motion deceleration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung T Nguyen whose telephone number is 703-308-6252. The examiner can normally be reached on 8:00am-5:30pm Mon thru. Friday, with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on 703-308-6730. The fax numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Examiner: Phung Nguyen



Date: December 17, 2003